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FOREIGN LANGUAGE LEARNING AND ADVANCED AGE
The 3-Power-Model: A New Conceptual Approach

Abstract:

Throughout the twentieth century theory formation on Foreign Language Acquisition has primarily focused on young language learners. However, current demographic tendencies along with the concept of *lifelong learning* strongly suggest an expansion of the age spectrum towards a more balanced theoretical approach and derived FLL-concepts.

The present paper addresses this issue by focusing on the question whether and to what extent FLL aptitude is subject to age-related variance. Building on the results of an empirical study conducted with adults who learnt Chinese-Mandarin, a range of relevant parameters was investigated and evaluated. Data analysis focused on retentiveness and cross-linguistic components, with further learner-related factors including individual differences, as well as psycholinguistic, and neurolinguistic aspects.

As it was diagnosed that current theoretical concepts do not sufficiently incorporate the very specifics of the adult foreign language learner beyond his/her school and student years, new conceptual perspectives were developed. In search of a proper evaluation of this 'overlooked and understudied' learner type the *3-Power-Model* was conceptualized as a new and future-oriented theoretical framework and taxonomic model. The three-level construct is meant to provide a conceptual base for the investigation of the intricate and volatile cause-effect relationship between age and psychological, genetic, biological and cognitive learner dimensions.

Introduction:

Especially in Western societies recent years have witnessed a considerable shift in demographic structures. In view of an ever-rising life-expectancy and an ever-falling birth-rate, a growing number of scientists, first and foremost sociologists, have focused on this hot and sensitive topic with all its implications in terms of a changing demographic context and resulting policy measures (Marin & Zaidi, 2007).

Without doubt the move from concepts to effective implementation of adequate measures needs to be extended to other scientific fields, among them the rather neglected field of adult

foreign language education - particularly with regard to adults who are in the later years of their vocational and professional careers.

To date most of the research on age-related questions of foreign language acquisition refers to young learners. Studies that focus on adult language acquisition mainly allude to adults who are exposed to a foreign language in a foreign environment (e.g. immigrants, expats). However, scientific observation and examination of the foreign language learner beyond school and university years who acquires language in a formal learner setting is still marginal. Against the background of sparse studies and the absence of a clearly defined age-specific learner profile, it will be increasingly important to focus on the conditions and mechanisms that underlie learning processes of the elderly population.

Problem statement:

There are indications in recent years that in many vocational settings the command of at least one foreign language is regarded as an essential prerequisite. From the perspective of global economics and social mobility, English indisputably takes the first place. However, also other languages are gaining more and more importance, especially languages that are spoken in the 'backyards' of promising high-yield and densely-populated economic regions (e.g. China, India). Although international corporate groups generally refer to English as their lingua franca, which they use at meetings and on the higher levels of corporate co-operation, at the grass-roots level of working life people almost exclusively communicate in their mother tongue. In face of an increasingly competitive situation on world markets, it often does not suffice to be an expert in one's professional domain. Taking these skills for granted, more and more companies start to attach importance to two other very decisive competencies: intercultural know-how and foreign language skills. It is these skills that are of vital importance when it comes to business with societies with a wholly different value system. A logical consequence of this tendency is a steadily growing demand of efficient foreign language learning methods for professional experts at different ages. There is reason to believe, that in future years an essential professional faculty on the international platform (apart from expert knowledge) will be the ability to bridge cultural gaps and set up short-cuts between business strategy and foreign language-specific accomplishment.

These prospects and demands not only justify, but they actually call for a new theoretical approach. Extensive studies should be encouraged, and methodological perspectives should be developed. Experts in the field ought to extend the scope of age-related research and grant the advanced-aged L2 learner his/her proper place. In other words, the advanced-aged foreign language learner deserves to be viewed as an object of research in his/her own right.

The advanced-aged language learner: An object of research in his/her own right

The interdependence of language skills and 'employability' on the corporate level will require rethinking and re-evaluation also on the educational and political level. The apparent inconsistency between 'haves' and 'needs' raises immediate and important questions about the nature of language learning and teaching with respect to advanced age. It may be argued that the needs of this particular learner group have not been sufficiently met.

With the main focus on children, adolescents and students, research as conducted to date has literally left the working adult learner one step behind, largely disregarding the specific characteristics that impact his/her learning success. In other words, the age-specific pros and cons of foreign language learning have been overlooked and understudied (Mathews-Aydinli,

2008). It seems that we have reached a crossroad of insufficiencies with a plethora of open questions that to a large extent have barely been investigated. What we need now is realignment and considerate reference to these long-neglected L2 learner aspects. We need to incorporate the specific profile features of the working adult language learner into the 'big picture' of L2 research. Furthermore, we need to recognize that there may be new and more adequate ways to explain the intrinsic qualities of the advanced foreign language learner's aptitude.

The present study is meant to help overcome the apparent inadequacy and lack of proper explanatory concepts.

Purpose of the study

The purpose of this study is the exploration and inspection of the many issues that surface when we leave the broader perspective of age-related SLA-research (that comprises primary, secondary and tertiary education) and narrow our focus down to the very specifics of the working adult foreign language learner. Based on the hypothesis that older learners take a different approach to language acquisition than their younger peers, research questions were formulated and a method developed to provide for reliable findings. It was assumed that neurobiological disadvantages might be compensated by maturity-related characteristics, such as a more developed aptitude in terms of measuring and monitoring attainment or a more sophisticated strategic and operative learner approach.

The integrative reference to socially conditioned aspects as well as neuropsychological facets helps clarify the picture of present-day requirements in terms of learning across the life-span. As such the project is also to be regarded as a conceptual framework for *lifelong learning*.

All in all, the purpose of the study is to understand the intricate relationship between the age of acquisition and the different factors that might foster or hamper individual learning success of adults beyond their school and/or university years who are fully integrated in professional life.

Research questions and design of the study

The present study exclusively focuses on the advanced-aged foreign language learner group in a formal learner setting. The overarching goal which results from this position was, to stake out a field in which research into the intricate interaction of adult learner specifics could take place. In a systematic effort to make headway in this direction, specific research questions were drafted and cornerstones of a research program laid. Given the interdisciplinary approach that comprises psycholinguistic, neurobiological and social aspects, the following issues took center stage: Can the aging brain learn and is learning an unfamiliar language system an attainable goal? Other parameters that were to be investigated are the influencing variables of neurobiological and maturity-related as well as intellectual aspects. In order to be able to elaborate possible distinctive features of age-related differences across the whole body of adult foreign language learners, it was essential to specify age groups and compare their performance.

30 subjects split into 3 age groups with 10 learners per group participated in the project. Group A was aged 20 to 32, group B 33 to 45 and group C was between 46 and 69. There was no upper limit to the 46+ group, as in light of the interdisciplinary quest in terms of demographic transition, the main purpose of the study was to focus on the learning potential

of the more advanced-aged learners. The study was designed to reveal the most significant distinguishing factors of the three groups in terms of memory aspects and learning aptitude.

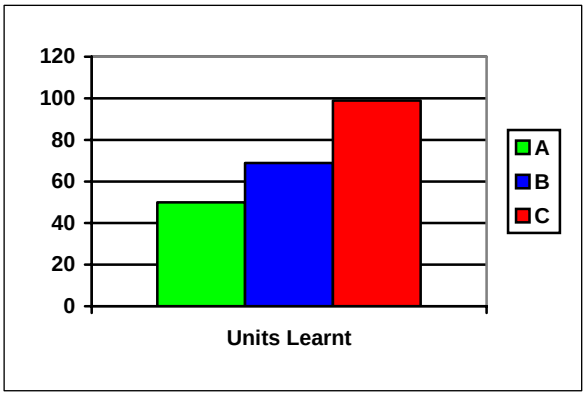
In order to provide for a homogeneous profile structure, test persons were primarily recruited from a specific professional line (aviation business). A regards the selection of the target language it was to be made sure that none of the participants have any previous knowledge. For this reason Chinese Mandarin with its wholly different set of linguistic features and mental concepts (as compared to the Indo-European language family) was chosen.

Another important factor was feasibility and effective use of working-life-embedded learning measures. Two factors were considered to be crucial: First, learner autonomy in terms of time and space. Second, a monitored strategic framework. Over a time-span of three months test persons were asked to work through an audio-based self-study program comprising 30 units self-dependently and in a self-regulatory manner. To gain a full picture of learner profile and performance, subjects had to fill out each one questionnaire before and after the learning phase. During the learning phase they were required to hand in study diaries on a regular basis. After the study phase, they were put to an audio-recorded oral test. This achievement test was accurately matched to each individual's learning progress. The data of the 5 best-performers per group were finally taken up into the analysis.

Major findings

Data were collected on three overarching levels: First, the level of global learning trajectories i.e. *task accomplishment*. Second, the linguistic level, which includes the analysis of language production in terms of *relative/absolute learning success* and *absolute mean value*. The relevant data were extracted from the audio recordings. Third, learner variables and their putative impact on learner results. This refers to the two distinct fields of learner demographics (education, job situation and multilingual factors) on the one hand, and psycholinguistic/cognitive parameters (motivation, self-concept and self-efficacy, learning styles, strategies and self-regulation, and self-assessment) on the other. The corresponding data were compiled from the questionnaires and study diaries.

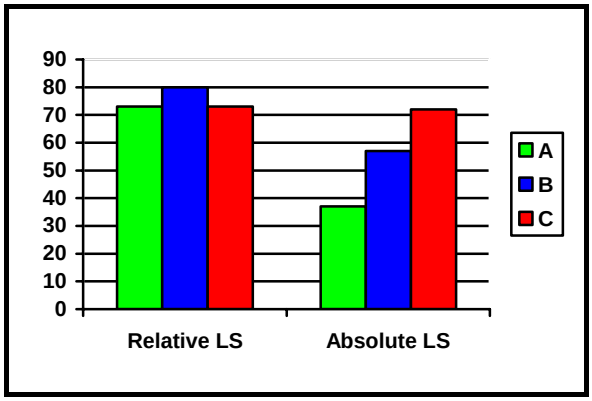
1.
Task accomplishment:
Target achievement of group A (20-32) = 50%, group B (33-45) = 69%,
group C (46-69) = 99%



Total of units learnt (in %):
A/50 – B/69 – C/99

Data analysis suggests the following:
As opposed to their younger counterparts, the older age group (C) generated and acted out a fully developed and realistic action plan, which in turn functioned as supporting pillar of their success curve. Results indicate that the older the learner, the more developed the volitional control mechanisms and strategic operations. It may be argued that the advantages of progressing maturation in terms of strategic self-regulation carry considerable weight. The 99% target achievement of group C suggests that the ability to "follow through" is a major driving force for learner success. It is more sophisticated with rising age.

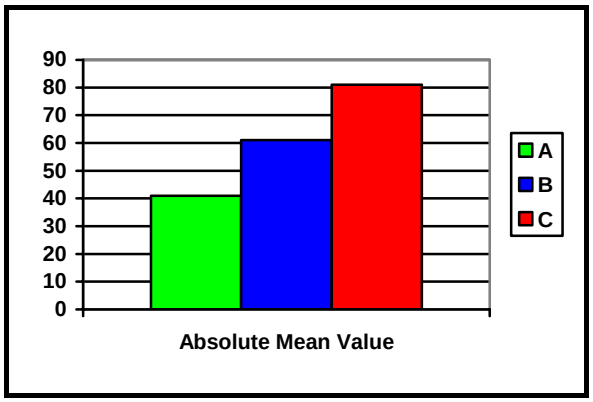
2.
Relative learning success + absolute learning success:



Relative vs. absolute learning success
Relative LS: A/73 – B/80 – C/73
Absolute LS: A/37 – B/57 – C/72

Since not all subjects had achieved the predetermined target of learning all units within the set time frame, it was essential to align the test design to target achievement and distinguish between *relative* and *absolute* learning success.
The *relative* learning success measures the learning success in relation to the units the participants had actually worked through. The *absolute* learning success gives account of the learning success in relation to the defined learning goal of 30 units. This explains the considerable deviation in *relative* and *absolute* learner success of subjects who had not even remotely reached the learning target of 30 units (e.g.: test person A-4, with 52.5 % in relative learning success and 11.25 % in absolute learning success). In contrast, high achievers in terms of task accomplishment show a more balanced or even equal ratio (e.g.: test person C-5, with 88.75 % both relative *and* absolute learning success).

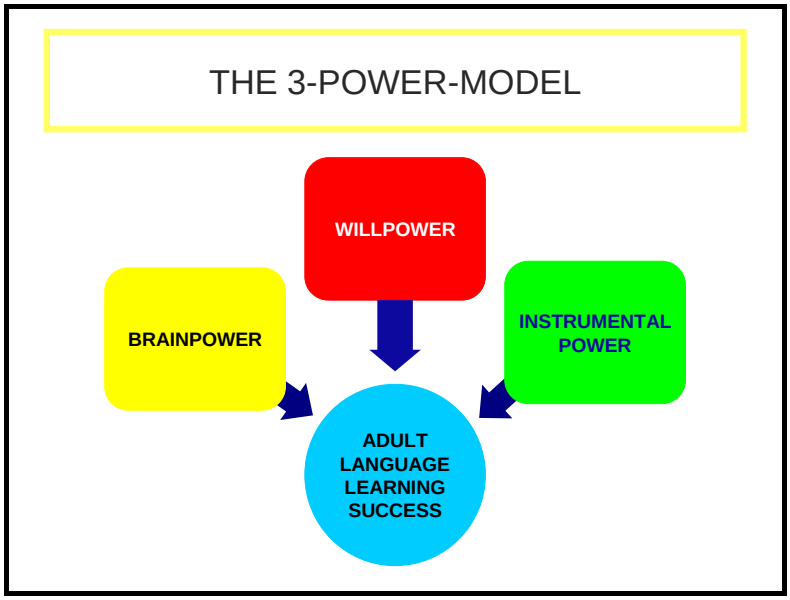
Absolute mean value:
This value was taken as decisive factor for the ranking of the 5 best performers per group. It is the combined results of *learnt units* and *absolute* learning success. Apart from the biological and cognitive aspects, this value includes the important element of self-management skills, which has been identified as one of the key issues for learner success.
The performance curve is in clear favor of group C who leads by 20 percent over group B and 40 percent over group A. This means that in terms of *all* relevant learner characteristics, the 46+ group proved to be the best performing learner group.



AMV (Absolute Mean Value)
A/41 – B/61 – C/81

Scientific conclusion

Based on the proposition that theory formation ought to build on a "whole-person perspective" in a "lifelong setting", the study develops concepts that improve on current inadequacies in theorizing about language learning in advanced age and thus help bridge a theoretical as well as methodological gap. The multi-faceted and volatile array of learner variables which is presented in the *3-Power-Model*, attempts to open a new chapter in adult foreign language learning research.



3-Power-Model

The theory suggests that success of adult foreign language learners is powered by three independent channels, each of which can be traced back to differential basic human resource patterns. While *brainpower* is to a large extent biologically conditioned, *willpower* is substantially determined by psychological factors and *instrumental power* is closely connected to cognitive maturation.

Willpower:
Within the 3-Power-Model it is assumed that *willpower* expresses the human being's self-regulatory and self-management skills, and these can to a large degree be consciously

controlled. There seems to be a subtle interactive relation between will, action and goal. The more demanding and sophisticated the goal, the more intricate is the action-component and the more volatile the will-component. Moreover the interaction between these modules is subject to diachronic variance. This means that the specific conscious influencing factor at the beginning of a certain task may change over time and adopt a series of wholly different content structures. Learner attributes such as setting goals, planning out, launching an action and following through are never static.

With regard to target achievement results of the present study show a very distinct pattern. It is the advanced-aged group that explicitly relegates the mid-aged and young adult learners to second and third place. Self-regulation and self-management, perseverance and the ability to stay focused apparently tend to be more developed and sophisticated the older one gets. A highly developed goal-oriented behaviour along with continuous conscious monitoring of one's own performance are vital driving forces for learner success and supply a distinct mirror image of a person's *willpower*. The ultimate learner results of the present study (see: diagram AMV) are affirmative evidence of the enormous impact of the *willpower* component.

Brainpower:
This learner-specific feature is determined by the learner's ability to remember and spontaneously deploy the whole array of newly learnt linguistic components. It refers to brain capacity and plasticity, issues that are in turn tightly connected with memory functions and retentiveness.
Another important issue is the "maintenance factor". Mental gymnastics plays a prominent role. Memory-enhancing elements such as an enriched environment, constant stimulation and exercise and explicit learning must also be seen as tightly connected to *brainpower*. In other words, central issues in terms of *lifelong learning* are "how malleable is the human brain?" and "how does this malleability relate to new challenges, practice and exercise?"

Results of the present study illustrate that with regard to the retentiveness factor (see: diagram *relative learning success*), the middle-aged group outperforms both their younger and older peers. For lack of a falling success curve from young to old it may also be argued that there is no such thing as a continuously diminishing functionality of the human brain from late adolescence onwards. In other words, the present results suggest that *brainpower* seems to be more reliable than many an individual, researcher or educationalist may have expected.

Instrumental Power:
Instrumental power is based on previous learning as well as general life experience. It refers to the notion of the learner's ability to exploit his/her knowledge about language through reflection on and manipulation of language (metalinguistic awareness). Thus it is closely linked to cognitive maturity and the ability to make use of one's conscious and unconscious methodological language learning potential. The learner, when exposed to a new foreign language, draws on a variety of previously set up tool boxes comprising conceptual, strategic or systematic abilities. The learner's successive speech processing steps from perception via monitoring on to production are conditioned by the availability of familiar concepts and experiences. Depending on the number of languages learnt and the proficiency achieved, the language learner may boost his or her learning capacity without being aware of it (Jessner, 2006)

Though there are indications that previous foreign language potentials correspond with relative learner success, verification seems to be problematic. As the evidence used in this

study is based on the participants' subjective self-evaluation statements in the questionnaires, the results obtained must be met with an appropriate degree of caution and scepticism.
In conclusion it may be stated that it is high time to assess the adult foreign language learner's needs from the perspective of differentiated age-specific development, and it may be advisable to take into consideration the impact of the three operant learner powers: *willpower*, *brainpower* and *instrumental power*.

Résumé and outlook

With reference to the research questions, the present study generates the following conclusions:

- Even with progressing age the human brain is able to effectively store new input.
- In terms of memory, cognitive abilities as well as brain capacity and plasticity there is no evidence of a falling success curve from young to old. *Brainpower* remains largely intact.
- Learning parameters that lie beyond brain functionality are enormously decisive. *Willpower* heavily influences learner progress and success.
- Accumulated metalinguistic and metacognitive parameters are of major importance. There are indications of the dynamic interaction of *instrumental power* components.

With reference to *all* learner aspects the older age group outperformed their younger peers.

So what do these results tell us?

First of all, we must recognize the advanced-aged learner as an object of research in his/her own right, assign him/her an appropriate place and develop and refine adequate explanatory models.

Secondly, it will be of utmost importance for future researchers and educationalist to differentiate within the adult age group and incorporate age-specific potentials and needs in future research.

And finally, as teachers, as education policy makers, as strategic planners, and as forward-looking human beings, it will be our immediate obligation to continually work on raising people's awareness that *lifelong learning* is a responsibility on two levels: the individual level and the institutional level. It is very likely that the number of qualified and long-serving employees, for whom learning in general and learning a foreign language in particular will be an indispensable by-product of their future job responsibilities, is on the rise (Longworth, 2003.

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